

## Winiecki, Eric

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**From:** Freeman, Kevin [Kevin.Freeman@arcadis-us.com]  
**Sent:** Monday, June 17, 2013 5:08 PM  
**To:** Winiecki, Eric; MacDonald, Jennifer; Fuentes, Rene  
**Cc:** [REDACTED]; Lori Terry Gregory (terrl@foster.com); Scott Stephen (sstephen@agrimgt.com)  
**Subject:** DOCKET NO. SDWA-10-2013-0080 / GD&S Dairy DRAFT Irrigation Water Management Plan  
**Attachments:** rpt-GDS\_IWM Plan-DRAFT\_06172013.pdf

Eric, Jennifer, and Rene:

Submitted on behalf of D & A Dairy, LLC (also known as D&A Dairy L.L.C.), George DeRuyter & Son Dairy, L.L.C., and George & Margaret, L.L.C., please find attached the DRAFT Irrigation Water Management Plan as prepared by AgriManagement and ARCADIS. This Plan is developed using an alternative method of irrigation water management as related to EPA's request for "electronic sensors at the bottom of the root zone in each application field to provide for automatic shut off of the irrigation system to minimize water movement below the root zone". This process will provide the framework to effectively control irrigation water application and reduce the potential for subsoil saturation.

The reasons for proposing an alternative method are:

- Unscheduled starts and stops of irrigation would impact the management capabilities of the irrigation water delivery as provided by Roza Irrigation District (RID) and Sunnyside Valley Irrigation District (SVID).
- Sensor malfunction or failure could lead to the gross under-watering or over-watering of the crop.
- Variations in soil type and texture within the 3<sup>rd</sup> foot are a concern.
- This alternative method is proven of this area and is being utilized in other eastern Washington Ground Water Management Areas (GWMAs), such as the Columbia Basin GWMA.

In summary, the alternative method will measure and monitor soil moisture levels using a data logger with capacitance sensors at depths of 1', 2', and 3' and a rain gauge sensor to monitor irrigation/rain. These sensors would be calibrated to specific soil types via gravimetric sampling; field capacity would be determined. Data loggers would record data on an hourly basis. All data would be documented and reported weekly. Periodic soil probing verification will also be done. The crop water usage would be both projected and verified each week through the use of a reference evapotranspiration (ETp) value and specific crop coefficient (Kc) to yield the specific crop evapotranspiration (Etc). The crop's effective rooting depth (ERD) will also be considered in this process. The irrigation system output rates for each application field would be calculated and verified under this method. This data will be utilized along with the above monitoring and forecasting to make intelligent weekly recommendations/decisions that are timely and crop specific so that adjustments can be made as needed.

AgriManagement and ARCADIS understand that you will have questions and concerns regarding this proposed alternative method. Based on our discussions during finalization of the Statement of Work, we understand that control of irrigation water is a significant issue for EPA. We would like to propose that, following your initial review of the document but prior to comment, a meeting be scheduled between technical staff from EPA, AgriManagement, and ARCADIS to fully discuss the aspects and implications of this proposed method.

The complete document is presented in PDF form. Hard copies will be provided via Federal Express. Please let me know if you have difficulty opening the attachments. Thank you.

**Kevin M. Freeman, PG** | Principal Hydrogeologist | [kevin.freeman@arcadis-us.com](mailto:kevin.freeman@arcadis-us.com)  
ARCADIS U.S., Inc. | 695 N. Legacy Ridge Drive, Suite 200 | Liberty Lake, WA, 99019  
T. 509 928 3369 x211 | M. 509 981 4747 | F. 509 928 3075  
Connect with us! [www.arcadis-us.com](http://www.arcadis-us.com) | [LinkedIn](#) | [Twitter](#) | [Facebook](#)

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